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BOTANICAL GAZETTE.

Vol. IV. OCTOBER, 1879. **No. 10.**

THE BEHEADING OF FLIES BY MENTZELIA ORNATA.—In the *Bulletin de la Societe Botanique de France*, vol. xxiv, 1877, p. 26-30, is an account, by M. J. Poisson, of his observations upon *Mentzelia* (*Bartonia*) *ornata*, as cultivated in the Jardin des Plantes, Paris, and the very singular mode in which it causes the destruction of flies. This account, until now, had escaped my notice. It is so curious that I here recapitulate the essential points of M. Poisson's communication, in the hope that observations may be made in this country, either by the few who are able to cultivate this ornamental plant with success, or by those who can examine it in its native stations. It is well known that the roughness of this and some related *Loasaceæ* is owing to the stiff bristles of the surface being provided with an armature, at certain points along their length, of retrorse barbs. There are three or four whorls of these barbs, and four or five barbs to each whorl, on the larger bristles; in the smaller there is only a terminal whorl of barbs, in the manner of a glochidiate bristle. Mixed with these harpoon-like bristles are some soft ones, tipped with a capitate gland, which secrete a viscid matter attractive to insects. It appears that flies so attracted thrust in their proboscis between the thickly set glochidiate bristles to feed upon the secretion of the glands between and below. The retrorse barbs interpose no obstacle to this; but when the proboscis is withdrawn, its dilated and cushion-like tip catches in the barbs, and holds all fast. The harder the backward pull, the firmer and the more extensive the attachment to the sharp barbs: the wounded and impaled organ becomes congested and swollen; and the insect is seldom able to disengage it. Especially is this the case with the larger flies. Some perish by exhaustion; but more of them, passing round and round in a circle and in one and the same direction, come to an end by twisting off their heads! Dried specimens of the plant in herbaria exhibit many small coleoptera and the *debris* of various other small insects, but these have been caught by their feet or mandibles or other parts. Insects too small to be impaled on the barbs are held fast by the viscid secretion of the glands, and likewise perish. In these respects the arrangement comes under the head of those recently illustrated by Kerner, for the exclusion from the blossom of unwelcome guests. And this may be extended to the flies also, which might reach the blossom on the wing, but are attracted rather to the glands beneath, to their own destruction. Those who have good opportunities of observing *Mentzelia ornata*, and its much more common relative *M. nuda*, are requested to investigate the matter, and ascertain whether this charge of cruel behavior is well founded.—A. GRAY.

FISSION OF LEAVES IN THE PEACH.—Mr. Henry W. Lothrop, an observant naturalist of Providence, has just brought me some leaves from a common peach tree (*Prunus Persica*), in his garden, which exhibit fission in a curious manner. On the same tree occur normal lanceolate leaves, others broader and barely three-lobed, some which are decidedly three-cleft, and some bifurcated in the manner so common in ferns. The last present a curious modification. What, in the three-cleft form, is the terminal segment, is here, in some cases, reduced to a minute leaflet, standing at right angles to the plane of the leaf.

That the phenomenon results from fission, and not from the fusion of two leaves, is shown by the position of the leaves, and by the continuation of the midrib in the simply lobed forms, to the normally acute apex. In some of the three-cleft ones, a vein rather stronger than the general pinnation runs into the lateral lobes. In the bifurcated examples, the midrib apparently divides at the sinus, giving off a branch to each lobe.—W. W. BAILEY.

Supplementary Note.—Since I forwarded an account of this abnormality, Mr. Lothrop, in whose garden the tree grows, has brought me some still more aberrant leaves. These are of the bifurcated type, with the odd leaflet borne in the sinus, but in these the leaflet is, as one might say, proliferous, bearing another beyond, or as if the first were constricted in the middle. The owner attributes the eccentricity of the tree to unusual manuring—W. W. B.

THE DICHOGAMY OF SPIGELIA MARILANDICA is strongly marked, and is of the type of *Campanula*. The anthers connive around the style, the upper half of which is beset with pollen-collecting hairs, on which the pollen is copiously deposited: the elongation of the style now protrudes the pollen-laden portion, and the terminal stigma matures a day or two later. In the second flowering here in September the adjustment occasionally fails by the style elongating before the anthers discharge their pollen.—A. GRAY.